



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/036,216	12/28/2001	Darin J. Beesley	702.117	5241
7590	05/05/2004		EXAMINER	
Devon A. Rolf GARMIN INTERNATIONAL, INC. 1200 East 151st Street Olathe, KS 66062			TRAN, DALENA	
			ART UNIT	PAPER NUMBER
			3661	

DATE MAILED: 05/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/036,216	BEESLEY ET AL.	
	Examiner	Art Unit	
	Dalena Tran	3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15 is/are allowed.
- 6) ☒ Claim(s) 3-14, 16-19 and 21-41 is/are rejected.
- 7) ☒ Claim(s) 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Notice to Applicant(s)

1. This office action is responsive to the amendment filed on 2/6/04. Claims 1-16,25, and 33 have been amended, claims 39-41 have been added. Thus, claims 3-41 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 3-14,25-32, and 39-40, are rejected under 35 U.S.C.103(a) as being unpatentable over Bender et al. (6,609,063) in view of Israni et al. (6,308,177).

As per claim 39, Bender et al. disclose a method for organizing roadway network data in a memory storage device, comprising: providing a data set of a roadway network containing roads and intersections between roads, intersection representing nodes, data set including node records uniquely associated with corresponding nodes (see column 2, lines 34-55; and column 4, lines 14-22), assigning a unique number to each node record based on a geographic location of a corresponding nodes relative to geographic locations of surrounding nodes (see columns 2-3, lines 56-3), and reordering node records into a node list based on unique numbers (see column 4, lines 48-66). Bender et al. do not disclose node blocks. However, Israni et al. disclose dividing node list into at least first and second node blocks by grouping consecutively numbered node records, and storing node records in first node block in contiguous memory (see columns 24-25, lines 58-49; and figure 8E). It would have been obvious to one of ordinary skill in the art at the

Art Unit: 3661

time the invention was made to modify the teach of Bender et al. by combining dividing node list into node blocks by grouping consecutively numbered node records, and storing node records in first node block in contiguous memory to provide an improved computer readable storage medium product having geographic data stored thereon for use in navigation systems.

As per claim 3, Israni et al. disclose reorders nodes into a one dimensional array of nodes based on unique numbers (see the abstract, lines 21-25).

As per claim 4, Bender et al. disclose storing data indicative of a plurality of nodes in an equal plurality of node records, and storing plurality of node records in adjacent memory locations (see columns 12-13, lines 41-2).

As per claim 5, Bender et al. do not disclose node block. However, Israni et al. disclose stores first node block in a long term memory as a contiguous memory section having a length configured to be loaded into a work space memory as a single, unitary block of node records (see columns 35-36, lines 35-9). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Bender et al. by combining stores node block in a long term memory as a contiguous memory section having a length configured to be loaded into a work space memory as a single, unitary block of node records to provide a desired level of navigating functionality to the end user that navigation systems operate efficiently in order to provide navigating information relatively quickly.

As per claim 6, Bender et al. do not disclose a block header. However, Israni et al. disclose storing first node block at least one of a block header and block footer comprising characteristic information describing at least one road segment feature descriptive of roadway segment leading to at least two nodes in node block (see column 25, lines 20-50). It would have

Art Unit: 3661

been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Bender et al. by combining storing node block at least one of a block header and block footer comprising characteristic information describing at least one road segment feature descriptive of roadway segment leading to at least two nodes in node block to provide the information in the geographic database in a format more efficient for use by each of the navigation functions.

As per claim 7, Israni et al. disclose a table associated with node records containing a list of features descriptive of road segments interconnecting nodes, at least one node record containing an index into table identifying a feature representative of a node associated with at least one node record (see columns 21-22, lines 64-38).

As per claim 8, Bender et al. disclose proximity criteria comprises at least one of a latitude and longitude coordinate for each of intersections (see column 5, lines 26-32; and column 11, lines 7-37).

As per claims 9-10, Bender et al. do not disclose bearing component. However, Israni et al. disclose for a first node in data set, identifying an adjacent node and a road segment connecting first node and adjacent node (see column 32, lines 49-60), identifying for adjacent node a bearing component and a distance component representative of a direction of travel along, and length of road segment, and storing bearing and distance component in a node record associated with first node (see columns 30-31, lines 60-3; and column 40, lines 5-20). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Bender et al. by combining identifying for adjacent node a bearing component and a distance component representative of a direction of travel along, and length of

Art Unit: 3661

road segment, and storing bearing and distance component in a node record associated with first node to obtain the routing road segment data entities for an optimum route.

As per claim 11, Bender et al. disclose identifying adjacency information for nodes directly connected to a first node and storing adjacency information for each of nodes in a list of sub-records (see column 6, lines 15-25).

As per claim 12, Bender et al. do not disclose node block. However, Israni et al. disclose identifying a geographic center of nodes grouped in node block and storing geographic center with node block (see column 26, lines 19-32). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Bender et al. by combining identifying a geographic center of nodes grouped in node block and storing geographic center with node block for generating a guided route image on the map.

As per claim 13, Israni et al. disclose identifying a relative offset between a geographic location of a first node in first node block and a geographic center associated with first node block, and storing relative offset in a node record associated with first node (see column 21, lines 1-15; and columns 25-26, lines 50-17).

As per claim 14, Israni et al. disclose storing a table of features descriptive of road segments interconnecting nodes, and storing in each node record an offset to a location in memory at which table is stored (see columns 21-22, lines 64-38).

Claims 25 and 26, are data structure system corresponding to method claims 1 and 11 above. Therefore, they are rejected for the same rationales set forth as above.

Claims 27-28, are data structure system corresponding to method claim 9 above. Therefore, they are rejected for the same rationales set forth as above.

Claims 30 and 31, are data structure system corresponding to method claims 7 and 12 above. Therefore, they are rejected for the same rationales set forth as above.

Claim 32, is data structure system corresponding to method claims 13-14 above. Therefore, it is rejected for the same rationales set forth as above.

As per claim 40, Bender et al. disclose node records are ordered on the computer readable medium based on a geographic location of each node relative to geographic locations of surrounding nodes such that node records of geographically proximate nodes are stored near one another on the computer readable medium (see columns 5-6, lines 60-14).

4. Claims 16-19,21-24,33-38, and 41, are rejected under 35 U.S.C.103(a) as being unpatentable over Bender et al. (6,609,063) in view of Israni et al. (6,308,177), and Nomura (5,371,678).

As per claim 16, Bender et al. disclose a method for calculating a navigation route between first and second geographic location, comprising: providing a data set of node blocks of data, data indicative of a roadway network of roads intersecting at intersection nodes, wherein data includes proximity criteria indicative of intersection nodes (see column 2, lines 34-55; and column 4, lines 13-22); accessing a first node record including data indicative of a first geographic location, first node record included in a first node block, first node record containing adjacency information indicative of an estimated location of only adjacent nodes directly connected to first node (see columns 2-3, lines 56-3). Bender et al. do not disclose a bearing direction. However, Israni et al. disclose calculating a bearing direction from first geographic location towards a second geographic location based on adjacency information included in first node record (see column 40, lines 5-20), and accessing a second node record included in first

Art Unit: 3661

node block, second node record including data indicative of a navigation route, navigation route contiguous from first node record (see column 25, lines 20-49). Bender et al. do not disclose header or footer. However, Nomura discloses accessing one of a header or footer included in first node block, header or footer including common feature data indicative of traffic characteristics for roads (see column 4, lines 1-40). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Bender et al. by combining accessing one of a header or footer included in first node block, header or footer including common feature data indicative of traffic characteristics for roads, and accessing a second node record included in first node block, second node record including data indicative of a navigation route, navigation route contiguous from first node record for providing accurate route guidance depending upon the direction the vehicle is approaching.

As per claim 17, Bender et al. disclose first and second node records are stored contiguously in a memory storage device (see column 4, lines 48-66).

As per claim 18, Bender et al. disclose proximity criteria includes at least one of a latitude coordinate and a longitude coordinate for each of node block (see column 4, lines 60-66).

As per claim 19, Bender et al. disclose identifying at least one adjacent node from a list of adjacent nodes, list stored in first node record, and choosing a next node from adjacent nodes based on at least one of proximity criteria and common feature data (see column 2, lines 34-55; and column 4, lines 23-47). Bender et al. do not disclose bearing component. However, Israni et al. disclose identifying at least one of a bearing component and a distance component for each adjacent node (see columns 30-31, lines 60-3). It would have been obvious to one of ordinary

Art Unit: 3661

skill in the art at the time the invention was made to modify the teach of Bender et al. by combining identifying at least one of a bearing component and a distance component for each adjacent node for setting the direction and distance of route travel from the point of start to the point of destination according to the result of calculation by the calculating block.

As per claim 21, Bender et al. do not disclose road level and speed data. However, Israni et al. disclose common feature data further comprises data indicative of at least road level and speed data (see columns 28-29, lines 45-19). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Bender et al. by combining common feature data further comprises data indicative of at least road level and speed data capable of searching a most appropriate route of travel according to a change in the running condition of the vehicle.

As per claim 22, Israni et al. disclose calculating a cost from first geographic location to a next node, cost based on common feature data (see columns 32-33, lines 61-8).

As per claims 23-24, Nomura ('659) discloses a collection number of intersection nodes in node block, and a group of node records based on proximity criteria (see columns 31-32, lines 27-24).

Claims 33-34, are navigation system corresponding to method claim 16 above. Therefore, they are rejected for the same rationales set forth as above.

Claims 35 and 37, are navigation system corresponding to method claims 17 and 19 above. Therefore, they are rejected for the same rationales set forth as above.

Claim 36, is a navigation system corresponding to method claims 1 and 21 above. Therefore, it is rejected for the same rationales set forth as above.

Art Unit: 3661

Claim 38, is a navigation system corresponding to method claim 18 above. Therefore, it is rejected for the same rationales set forth as above.

As per claim 41, Bender et al. disclose node records are ordered on the computer readable medium based on a geographic location of each node relative to geographic locations of surrounding nodes such that node records of geographically proximate nodes are stored near one another on the computer readable medium (see columns 5-6, lines 60-14).

5. Claim 20, is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 15, is allowable.

Remarks

6. Applicant's argument filed on 2/6/04 has been fully considered. Upon updated search, the new ground of rejection has been set forth as above.

In the remark on page 10, last paragraph, and page 11, second paragraph of the amendmend, applicant's argue about Livshutz et al. reference and Israni et al. reference. Livshutz et al. reference has been withdrawn from this rejection. However, Israni et al. reference still disclose data manipulation and organization include assigning unique numbers to each node record based on a geographic location of a node relative to surrounding nodes, or reordering the node records into a node list based on such numbers (figure 8E), in this figure, node record 102,103,.....112, are all the unique numbers to each node, and node 103,104,105..... are all the surrounding nodes relative to node 102, and the node record 102,103,104,105,.... are made up of

Art Unit: 3661

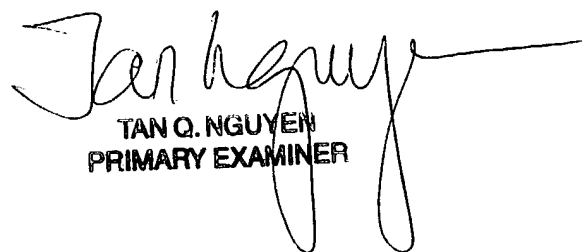
a node list, and node block is a grouping consecutively numbered node records (claim 39 of the invention), in figure 8E, grouping consecutively numbered node record 102, node record 103, node record 104,..... all these node records made up of a node block.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalena Tran whose telephone number is 703-308-8223. The examiner can normally be reached on M-F (7:30 AM-5:30 PM), off every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on 703-305-8233. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

/dt
April 30, 2004


TAN Q. NGUYEN
PRIMARY EXAMINER